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# Body Image in Women with Type 1 Diabetes (T1D) and Closed-Loop Treatment

**C**losed-loop systems used in type 1 diabetes are advanced technologies that automate insulin delivery to help control glucose levels. These systems integrate 2 main devices: an insulin pump and a continuous glucose monitor, which work together through an intelligent control algorithm.

Although these new technologies can improve glycemic management in women with type 1 diabetes mellitus (T1DM), they may also have negative repercussions on their body perception.

Therefore, it is of paramount importance to understand how closed-loop treatment affects the self-image and psychological well-being of women with T1DM to provide sensitive and personalized care for this issue at both personal and professional levels.

## WHAT IS BODY IMAGE IN WOMEN WITH DIABETES? WHY IS IT IMPORTANT?

**Body image** can be defined as the perception a woman has of her own body and the attitudes associated with that perception.

This perception includes not only physical aspects, such as size, shape, or weight, but also how she feels about these characteristics in relation to social, cultural, and personal expectations.

This perspective directly impacts her **self-esteem, mental health, and overall well-being**. The use of visible devices can generate discomfort and stigmatization, negatively affecting self-image. The constant presence of these devices on the body can intensify **the feeling of being “marked” by the disease**, increasing anxiety, insecurity, and dissatisfaction with one’s body. This conflicted relationship with physical appearance can affect emotional health, undermining confidence and well-being.

**Gender pressure** and **social media** play a fundamental role in shaping women’s **self-image**, as societal pressure reinforces the idea that women should be valued primarily for their physical appearance, while social media promotes beauty standards and “perfect” bodies that often do not reflect reality. This combination of unrealistic body expectations generates insecurities and contributes to a conflicted relationship with one’s own image.

## HOW ARE CLOSED-LOOP TREATMENT AND BODY IMAGE RELATED IN WOMEN WITH T1DM?

In women with T1DM, external pressure

and self-awareness about body image are further intensified by the visibility of the medical devices they use, which can negatively impact their mental health.

Specifically, it affects two areas:

- **Impact on Body Image:**

### Visibility of Devices:

The insulin pump and glucose sensor must be worn on the body, which can be visible with certain clothing, especially in hot weather or situations where more skin is exposed. This can cause discomfort or insecurity, particularly in social, work, or physical activity settings, such as going to the beach or gym.

### Skin Marks:

Constant use of devices can cause irritation, scars, bruises, or permanent marks on the skin, negatively affecting body perception.

### Feeling of “Difference”:

The constant presence of medical technology can make some women feel different or less attractive (due to their own fears or experiences with others, e.g., in sexual relationships), leading to low self-esteem.

- **Interference in Intimate Life:**

### Discomfort During Sexual Relations:

Devices attached to the body can interfere with intimacy, causing discomfort or shame, not only due to the woman’s own perception but also because of previous experiences with others that may have created an atmosphere of insecurity and judgment about her body, affecting spontaneity and satisfaction in relationships.

### Fear of Disconnections or Damage:

The possibility of the device detaching or being damaged during physical contact can generate anxiety and limit sexual expression.

## STRATEGIES TO PROMOTE A POSITIVE BODY IMAGE IN WOMEN WITH TYPE 1 DIABETES MELLITUS AND CLOSED-LOOP TREATMENT

To address the challenges faced by women with T1DM due to the use of closed-loop devices, it is important to have personal-level strategies to facilitate emotional adaptation and a positive relationship with their body image.

However, it is also essential that healthcare teams are sensitized and trained in body image and include all necessary professionals for a comprehensive approach, such as endocrinologists, nurses, psychologists, and nutritionists.

### Strategies for Women with T1D.

#### *Personalization of Devices and Personal Style:*

- Use covers, stickers, or decorations that reflect their personality, making the devices an extension of their style.
- Explore different insertion sites to find the most comfortable option.
- Experiment with different clothing styles (e.g., pants with pockets) to find options that increase comfort and confidence.

#### *Assertive Communication with Healthcare Team:*

- Express any concerns about body image and how the device affects emotional well-being.
- Request support or adjustments to treatment if body image is significantly affected.

#### *Positive Visualization on Social Media:*

- Learn strategies from other women with T1D on how they incorporate closed-loop systems into their daily lives.
- Follow accounts and communities »

## THE CONSTANT PRESENCE OF CLOSED-LOOP SYSTEM DEVICES ON THE BODY CAN INCREASE ANXIETY, INSECURITY, AND DISSATISFACTION WITH ONE'S BODY



» that promote a positive view of diabetes and body image, helping them feel represented and supported.

### ***Self-Esteem and Self-Acceptance Practices:***

- Practice positive affirmations and mindfulness techniques to strengthen self-esteem and reduce body-related anxiety.
- Remember that the device is a tool that improves their quality of life.

### **Strategies for Health care Professionals Supporting Women with T1DM:**

#### ***Comprehensive and Sensitized Care in Body Image:***

- Offer a holistic approach that integrates not only glycemic control but also emotional well-being and body image perception.
- Conduct periodic interviews to explore concerns related to self-image and the emotional impact of device use.
- Train in body image, self-esteem, and mental health, especially related to the use of medical technology.
- Provide clear information to patients about how devices can impact body image and strategies to manage these situations.
- Include discussions on individual preferences regarding device placement to minimize discomfort or visibility.
- Offer alternatives for less visible or more discreet devices, if available.



## TO ADDRESS THE CHALLENGES FACED BY WOMEN WITH T1DM DUE TO THE USE OF CLOSED-LOOP DEVICES, IT IS IMPORTANT TO HAVE PERSONAL-LEVEL STRATEGIES

### » **Referral to Psychologists Specialized in Diabetes:**

Psychologists are key to preventing eating disorders (ED) and body image-related issues.

Addressing these concerns with professional support helps improve body image, emotional well-being, and

promotes greater treatment adherence. Therefore, healthcare professionals should facilitate this referral, validating the needs of women with T1D regarding their body image.

### **Referral to Nutritionists Specialized in T1D:**

- Prevent ED through nutritional edu-

cation focused on body acceptance, promoting a positive relationship with food and the body, and reducing pressure to achieve unrealistic weight standards.

- Provide strategies to manage the emotional impact of constant monitoring and the use of visible devices. **D**

## CONCLUSIONS

Closed-loop devices in women with T1DM can generate insecurity, anxiety, and a sense of difference that affects their body image, self-esteem, and emotional well-being. Therefore, it is essential that the multidisciplinary team supporting them offers care sensitized to body image, emotional support, education, and strategies to facilitate acceptance of these devices. Additionally, it is important for women to question societal beauty standards and unrealistic ideals promoted on social media. Reducing this external pressure and seeking help when needed will contribute to a more positive relationship with their bodies and improve their overall well-being while living with T1DM.

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